

16. A multi-chip module comprising:

first and second support structures, each support structure including a plurality of electrically conductive paths and a plurality of surface mount contacts positioned along an edge thereof, the plurality of surface mount contacts arranged to align with corresponding surface mount pads on a printed circuit board to electrically couple the first and second support structures to the printed circuit board; and

5 at least first and second juxtaposed standard surface mount chips, each chip having planar surfaces extending between at least a pair of sides of the chip, the planar surfaces arranged generally between the support structures with the planar surfaces of adjacent chips positioned face to face, each side of each chip including a plurality of pins 10 extending toward one of the support structures beyond the side, at least some of the pins being electrically connected to one of the support structures.

15 17. The multi-chip module of Claim 16, wherein the juxtaposed standard surface mount chips are functionally identical.

20 18. The multi-chip module of Claim 16, wherein the juxtaposed standard surface mount chips are interconnected by the plurality of electrically conductive paths such that all of the juxtaposed standard surface mount chips may be selected simultaneously.

25 19. The multi-chip module of Claim 16, wherein the electrical conductive paths are electrically coupled to at least some of the pins of the juxtaposed standard surface mount chips and are arranged so as to individually select at least one of the juxtaposed standard surface mount chips.

20. The multi-chip module of Claim 16, wherein a total number of the surface mount contacts is greater than the total number of pins of the first chip.

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21. The multi-chip module of Claim 16, wherein at least some of the pins of the juxtaposed standard surface mount chips are mechanically connected to one of the support structures.
- 5        22. The multi-chip module of Claim 21, wherein the plurality of pins associated with a lower-most one of the juxtaposed standard surface mount chips are attached to at least some of the plurality of surface mount contacts.
- 10      23. The multi-chip module of Claim 16, wherein at least some of the pins of the juxtaposed standard surface mount chips are solder connected to one of the support structures so as to mechanically and electrically connect the pins to the support structures.
- 15      24. The multi-chip module of Claim 16, wherein all of the juxtaposed standard surface mount chips of the module are positioned to lie entirely between the first and second support structures.
- 20      25. The multi-chip module of Claim 16, wherein at least corresponding portions of the first and second support structures lie generally parallel to each other.
- 25      26. The multi-chip module of Claim 25, wherein the first and second support structures comprise planar side boards.
27. The multi-chip module of Claim 25, wherein each of the first and second support structures extends along at least a side of one of the plurality of juxtaposed standard surface mount chips.
28. The multi-chip module of Claim 27, wherein each support structure has a unitary construction.

29. The multi-chip module of Claim 25, wherein the planar surfaces of each chip lie generally normal to the parallel corresponding portions of the first and second support structures.

5 30. The multi-chip module of Claim 16, wherein the first standard surface mount chip is aligned above the second standard surface mount chip.

10 31. The multi-chip module of Claim 16, wherein the first and second support structures comprise opposing inner surfaces, and the pins of the juxtaposed standard surface mount chips extend outward beyond the inner surfaces of the first and second support structures.

15 32. The multi-chip module of Claim 31, wherein said first and second support structures each include a plurality of vias that are arranged to receive at least outer ends of at least some of the pins.

20 33. The multi-chip module of Claim 16, wherein the first and second support structures are spaced apart from each other by a distance less than a distance between an outer end of a first pin on one side of the first standard surface mount chip and an outer end of a second pin on an opposite side of the first standard surface mount chip.

25 34. The multi-chip module of Claim 16, wherein said planar surfaces of each chip lies generally within respective parallel planes, and each pin of at least one of the chips connects the corresponding support structure at a location outside the space between the planes.

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